



GEM Centre Completion Report for Phase 2 Funding 2017–2020

December 2020

The Global Education Monitoring Centre supports the monitoring of educational outcomes worldwide, holding the view that the systematic and strategic collection of data on education outcomes, and factors related to those outcomes, is required to inform high quality policy aimed at improving educational progress for all learners.

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List of abbreviations

ANLAS	Analysis of National Learning Assessment Systems
CARI	Centre for Assessment Reform and Innovation
CLA	Catalogue of Learning Assessments
DFAT	Department of Foreign Affairs and Trade
DFID	Department for International Development
ECEC	early childhood education and care
EQAP	Educational Quality and Assessment Program
GAML	Global Alliance to Monitor Learning
GPE	Global Partnership for Education
GP-LA	Principles of Good Practice in Learning Assessment
IEA	International Association for the Evaluation of Educational Achievement
IIEP	International Institute for Educational Planning
KIX	Knowledge and Innovation Exchange
MTR	mid-term review
NEQMAP	Network on Education Quality Monitoring in the Asia-Pacific
OMAES	Œuvre Malienne d'Aide à l'Enfance du Sahel
PAL	People's Action for Learning Network
PILNA	Pacific Islands Literacy and Numeracy Assessment
SDG	Sustainable Development Goal
SEA-PLM	South East Asia Primary Learning Metrics
TALENT	Teaching and Learning Educators' Network for Transformation
UIS	UNESCO Institute for Statistics
UKFIET	Education and Development Forum
USAID	United States Aid

I. Introduction

In 2014, the Australian Council for Educational Research (ACER) and the Australian Government's Department of Foreign Affairs and Trade (DFAT) established a partnership under the Global Education Monitoring Centre. Since then, there have been two funding periods: Phase 1 from 2014–2017 and Phase 2 from 2017–2020. Phase 3 will cover 2020–2023.

This report documents the completion of Phase 2 funding and describes the shared priorities of DFAT and ACER through the GEM Centre, followed by the objectives and key outcomes of the work program during this period. The outcomes and lessons learned, together with findings from the GEM Centre mid-term review (MTR) in 2019,¹ are reflected against the impact and sustainability of the ACER–DFAT partnership. The MTR validated the overall success of the GEM Centre and identified areas for further development, specifically to improve the effectiveness of the partnership. This report concludes with a brief outlook on how these developments will be addressed under Phase 3 of the GEM Centre.

2. Shared partnership priorities

The ACER–DFAT partnership is based on mutual priorities articulated in ACER's mission to improve learning and in DFAT's Education Strategy and education policy.² These priorities underpin the work program of the GEM Centre and can be summarised as:³

- a common commitment to academically rigorous research, analysis and capacity development in the education sector
- the intention to strengthen Australia's capability to
 - inform and influence international debates on global learning goals and outcomes
 - monitor educational outcomes in the Indo-Pacific region by reviewing trends and growth, which are essential markers for governments and development partners for appraising the efficacy of the (development) education investment and accountability

¹ Fearnley-Sander, Mid-cycle independent review of the ACER Centre for Global Education Monitoring (ACER-GEM), January 2020

² *Strategy for Australia's Aid Investments in Education: 2015–2020*

³ Fearnley-Sander, Mid-cycle independent review of the ACER Centre for Global Education Monitoring (ACER-GEM), January 2020, pp. 37–38 and GEM work program 2014–2017 and 2017–2020

- a preference for integrated system-based approaches and evidence-based decision-making for improving learning
- the importance of early childhood development and foundational skills for learner progression
- a focus on learning in disadvantaged contexts
- an interest in the Asia-Pacific region.⁴

These partnership priorities are based on the goal of quality education for all, where knowledge and skills acquired from early childhood onwards are considered essential for strong human development, contribute to a skilled and competitive workforce and lift living standards, especially for the disadvantaged.

3. GEM Centre objectives and key outcomes

The overarching goal of the GEM Centre is to strengthen national, regional and international assessment systems to drive improvements in learning outcomes. Strengthened assessment systems have the technical capacity to implement robust and appropriate measurement in order to obtain evidence on learning outcomes. This allows student achievement to be described, benchmarked, tracked across grades and over time, and compared within and between countries. Additionally, a strengthened assessment system is one that draws on background data to understand the contextual factors that affect student achievement. The act of collecting contextual data must be well planned, draw on educational theory and be informed by current debates on policy and practice. Further, a strong assessment system facilitates continuous capacity building for learning assessment and draws on external expertise where it is needed.

The GEM Centre defines **four principles of practice** to ensure that the evidence from a learning assessment system is meaningful and useful for education policy and practice. These principles are to:

- measure where learners are at in their learning
- measure growth in learning
- take a ‘literacy approach’ to measuring learning⁵

⁴ GEM Centre Funding proposal, p.1.

⁵ Discussion of the ‘literacy’ approach to measurement can be found in “The literacy idea” by Ross Turner, 2014. https://www.acer.org/files/05_AssessGEMs_The-literacy-idea.pdf

- promote and support the effective use of learning assessment data.⁶

These key principles are the basis of the **three focus areas** of the GEM Centre work program (shown in Table 3.1)

Focus area	Goal	Achieved by
1	System strengthening for learning improvement	1.1 Defining, promoting and supporting best practice in assessment 1.2 Supporting better use of assessment data in education policy
2	Developing and using metrics and indicators for Education 2030	2.1 Building relationships to support Education 2030 2.2 Developing learning metrics 2.3 Developing contextual indicators
3	Assessment evaluation, and exploring, extending and translating the evidence base of effective policy and practice in education	3.1 Mapping, describing and evaluating assessments 3.2 Exploring, extending and translating the evidence base on effective policy and practice in education

Table 3.1 Focus areas of Phase 1 and Phase 2 GEM Centre work program

A cross-cutting objective of the GEM Centre work program is to promote gender equality and disability inclusion across all three focus areas.

Key outcomes against GEM Centre objectives

The GEM Centre has made substantial progress towards achieving the objectives within each of the three focus areas of the work program. Progress has been monitored against specific outputs of the work program and presented in regular quarterly reports to the GEM Board.⁷ The most significant contributions and major achievements of Phase 2 are presented in the following sections against the objectives of each focus area.

Focus Area 1 System strengthening for learning improvement

The broad goal of Focus Area 1 is to strengthen education systems to improve learning by promoting and supporting best practice in assessments. This should yield high-quality, reliable data for education system monitoring and support the better use of assessment data in education policy. To achieve the goal of Focus Area 1, the GEM

⁶ Information about GEM's key principles overall can be found on the GEM website: <https://www.acer.org/au/gem/about/vision>, and also in "Towards a growth mindset in assessment", by ACER's CEO, Prof Geoff Masters, 2013. https://research.acer.edu.au/cgi/viewcontent.cgi?article=1017&context=ar_misc

⁷ The GEM Centre is governed by the GEM Board, which consists of high-level representatives nominated by each partner.

Centre documents and communicates best practice through tools, methods and approaches, which are disseminated through the [GEM Centre website](#), capacity-building activities, and applied in the context of specific projects (see Appendix A).

Principles of good practice in learning assessment

During Phase 2, the GEM Centre made a significant impact on building the capacities and technical robustness of national and regional assessment systems. This built on the 14 key areas of a robust assessment program presented in the ‘Principles of good practice in learning assessment’ (GP-LA),⁸ which was co-published with the UNESCO Institute for Statistics (UIS) and disseminated through the Global Alliance to Monitor Learning (GAML).⁹ The approach to the 14 key areas of a robust assessment program has been instrumental in a number of applications and has underpinned other tool development.

The GP-LA framework was used in many specific project contexts, for example:

- a set of ‘how-to’ guides for each of the 14 key areas developed by the GEM Centre (forthcoming)
- a self-evaluation tool developed by ACER India under a UNICEF contract for capacity development on robust learning assessments of senior state education officials of all states in India (see Table A.2)
- the UIS Catalogue of Learning Assessments (CLA),¹⁰ which collects data on countries’ capabilities in learning assessment for the purpose of SDG 4 monitoring, and indicates areas for capacity-building to help countries arrive at the required degree of rigour (see also the section on assessment evaluation)
- a capacity development workshop on data quality and accuracy facilitated by the GEM Centre for the Network on Education Quality Monitoring in the Asia-Pacific (NEQMAP)
- support for the development of a Data Quality Standard Framework for the citizen-led assessments of the People’s Action for Learning (PAL) Network
- content development for the UNICEF South Asia Knowledge Platform on Learning Assessment by ACER India¹¹ (see Appendix A, Table A.2 for details).

⁸ ACER & UNESCO Institute for Statistics. (2017). *Principles of Good Practice in Learning Assessment*. Melbourne: ACER. <http://uis.unesco.org/sites/default/files/documents/principles-good-practice-learning-assessments-2017-en.pdf>

⁹ see also next section on GEM Focus Area 2

¹⁰ <http://uis.unesco.org/en/cla-survey>

¹¹ <https://www.acer.org/au/discover/article/a-knowledge-portal-on-learning-assessments-for-south-asia>

ANLAS toolkit

GEM Centre principles and approaches have also heavily informed the development of the Analysis of National Learning Assessment Systems (ANLAS), which was initiated by the Global Partnership for Education (GPE). ACER has been contracted to develop and pilot the ANLAS process and toolkit, with support from the GEM Centre's specialist resource group.

ANLAS was initiated by the GPE to provide a resource for developing country partners to build effective and sustainable learning assessment systems for evidence-based decision-making in education policy and practice and to support education sector planning.¹² Countries can use the ANLAS toolkit to systematically gather and analyse information about their national learning assessment systems with the aim to inform the development and implementation of improvement strategies as part of the wider education sector planning process.

The processes and tools of ANLAS were developed by ACER in 2018 and piloted in Ethiopia, Mauritania and Vietnam in 2019.

The ANLAS toolkit was launched in October 2019. Since then, the GEM Centre has collaborated with the GPE to promote ANLAS through a number of activities, including:

- a webinar on the use of learning assessment data¹³ jointly facilitated by UNESCO International Institute for Educational Planning (IIEP), GPE and the GEM Centre
- a presentation of ANLAS at the annual NEQMAP meeting
- facilitation of a regional capacity-building workshop with UNESCO Dakar, and UNICEF for the UNESCO Teaching and Learning Educators' Network for Transformation (TALENT) for Sub-Saharan Africa,¹⁴ on the development and strategic use of national large-scale learning assessments.

As part of the preparation for the GPE's Knowledge and Innovation Exchange (KIX)¹⁵ initiative, the GEM Centre provided input and reviewed the discussion paper, 'Strengthening learning assessment systems'.

¹² The ANLAS model was developed based on the 'System-wide analysis of assessment practices', developed by the GEM Centre to support the UIS and its GAML initiative. In particular, the 'quality' dimension of ANLAS is underpinned by the GP-LA.¹² Supplementary funding was also provided by the GEM Centre specialist resource group that provided guidance for the conceptualisation of the ANLAS model. For more information on ANLAS visit: <https://www.globalpartnership.org/content/toolkit-analysis-national-learning-assessment-systems-anlas>

¹³ <https://learningportal.iiep.unesco.org/en/forum/join-our-second-webinar-on-the-use-of-learning-assessment-data>

¹⁴ <http://www.education2030-africa.org/index.php/en/workshop-link-december-2019>

¹⁵ <https://www.globalpartnership.org/content/strengthening-learning-assessment-systems-knowledge-and-innovation-exchange-kix-discussion-paper>

Through this collaboration with the GPE, a new tool has been initiated and is currently under development. The GEM Centre Decision Matrix for Large-Scale Assessments will support countries to identify which existing large-scale assessment programs (international/regional) match their monitoring needs.

Capacity Needs Analysis framework for OECD PISA 2022

The GP-LA framework and its use within the ANLAS model also formed the basis for the Capacity Needs Analysis framework developed by ACER for the OECD PISA 2022 Core E Country Preparation and Implementation Support. This framework identifies capacity needs in large-scale assessments, with a focus on the successful implementation of PISA 2022, and has been implemented in India, Uzbekistan and El Salvador.

Promoting the effective use of assessment data

In terms of promoting the effective use of assessment data, the GEM Centre has made significant impact through its capacity-development workshops for UNESCO, NEQMAP and TALENT (see Table 1 in Appendix A). Promoting the effective use of learning assessment data is also highly connected to the development and application of learning metrics (see Focus Area 2).

Focus Area 2 Developing and using metrics and indicators for Education 2030

The overall objective of Focus Area 2 is to build sustainable relationships with global stakeholders committed to the Education 2030 agenda. These relationships will allow the GEM Centre to make a significant contribution to the practices, processes and methods through which the international community monitors attainment of Sustainable Development Goal 4 (SDG 4), to 'ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'.¹⁶

During Phase 2 of the ACER–DFAT partnership, the GEM Centre consolidated its status as a key contributor to the Education 2030 agenda. Building on the Phase 1 achievements of the GEM Centre, this contribution was formalised in 2017 in a Memorandum of Understanding with the UIS, which has been officially mandated with monitoring progress across the SDG 4 targets.¹⁷ In this context, the GEM Centre also continued its contribution to GAML.¹⁸ Through its ongoing active participation in GAML (see Table A.1), the GEM Centre has built relationships with global agencies to implement the Education 2030 agenda.

¹⁶ <https://sdgs.un.org/goals/goal4>.

¹⁷ <http://uis.unesco.org/en/topic/sustainable-development-goal-4>

¹⁸ <http://gaml.uis.unesco.org/>

At the core of the GEM Centre's contribution to the SDG 4 agenda is the development of technically sound and internationally comparable learning metrics, which will enable countries to align their assessment systems with global SDG monitoring and reporting. The focus is on the methods for reporting progress towards achieving SDG 4.1.1,¹⁹ to provide meaning to this indicator and report outcomes against it.

The GEM Centre was able to make progress in developing learning metrics by engaging with UIS and GAML to establish a shared understanding of the two domains under SDG 4.1 – reading and mathematics and how learning progress in these domains can be measured using learning metrics. The GEM Centre gave guidance to UIS to identify learning assessment programs that could be included in SDG 4.1 reporting.

Learning Progressions for Reading and Mathematics

In 2017, the GEM Centre conducted a widespread consultation process around the draft ACER Learning Progressions for Reading and Mathematics and advocated for their use in the SDG 4.1 context.²⁰ This advocacy took place in a variety of contexts, including at international conferences of the IEA, UKFIET and ACER conferences. Since then, the GEM Centre continues to work closely with ACER's Centre for Assessment Reform and Innovation (CARI) to build infrastructure to support improved reporting of assessment outcomes, linked to the ACER Learning Progressions. This will include the development of the ACER Learning Progression Explorer,²¹ a free online resource that supports users to apply the ACER Learning Progressions in their own contexts.

The GEM Centre has also advocated and supported the wider use of learning progressions in a range of projects across ACER, and has been influential in providing high-level input to some critical Australian reviews in the last two years, for example, the Gonski review,²² and more recently, the NSW Curriculum Review.²³ The work on the ACER Learning Progressions has also influenced work in building other learning progressions in the general capabilities areas of critical thinking, collaboration and creative thinking. These include definitions and hypothetical progressions of the skills, as well as the development and trial testing of a range of assessment materials (test items, rubrics for evaluating responses, etc.) for the assessment of 21st-century skills.

¹⁹ SDG 4 indicator 4.1.1 on the proportion of children and young learners (a) in Grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary, achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex (Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development) https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review_Eng.pdf

²⁰ https://www.acer.org/files/UIS_Reporting_Scales_concept_note.pdf

²¹ <https://www.acer.org/au/gem/learning-progression-explorer>

²² Northam, M. (2017). Gonski: Review to achieve educational excellence in Australian schools. Newsmonth, 37(7), 4.

²³ Masters, G. N. (2020). Reforming the New South Wales curriculum.

GEM Centre input to the Education 2030 agenda

During Phase 2, the GEM Centre has provided input to the UIS on the Education 2030 agenda, which has evolved as the UIS has built support for various elements. The contributions are detailed as follows.

Comparative Judgement Linking approach

The GEM Centre conducted a series of case studies (see Appendix A, Table A.2 for details) to explore mechanisms to align existing assessment program outcomes with the ACER Learning Progressions. The purpose was to inform alternative mechanisms for education systems to report against SDG 4.1.1 and resulted in the development of the Comparative Judgement Linking approach (also known as the ‘Pairwise Comparison Method’). This is an alternative to the Policy Linking approach and allows countries to use existing assessment systems/national assessment data to report against SDG 4.1.

The Comparative Judgement Linking approach is used in a project involving the Pacific Islands Literacy and Numeracy Assessment (PILNA), a collaboration between the Educational Quality and Assessment Program (EQAP) and the GEM Centre. The Pairwise Study maps PILNA against the SDG 4.1.1 Minimum Proficiency Levels in mathematics and reading (see Table A.1 for details). It is an important step for Pacific education stakeholders releasing regional student learning data that can be used in international reporting. The PILNA Pairwise Study is also designed to support capacity development of Pacific education stakeholders.

In 2020, the GEM Centre co-funded, and provided technical guidance to align the Southeast Asia Primary Learning Metrics (SEA-PLM) reporting levels with SDG 4.1.1 Minimum Proficiency Levels in mathematics and reading (see Appendix A, Table A.2), to enable SDG 4 monitoring and reporting. As a result of this alignment study, the performance of Grade 5 students in six countries in the ASEAN region has been reported against SDG 4.1.1a and 4.1.1b Minimum Proficiency Levels in reading and mathematics.

Global Proficiency Frameworks for Reading and Mathematics

The GEM Centre reviewed and provided substantive input into the Global Proficiency Frameworks for Reading and Mathematics (by USAID, UIS, DFID, the Bill and Melinda Gates Foundation and ACER),²⁴ and to the refinement of the SDG 4.1.1 Minimum Proficiency Levels (2019/20).²⁵ The GEM Centre also provided input into the Policy Linking method and its application.

²⁴ <https://www.edu-links.org/resources/global-proficiency-framework-reading-and-mathematics>

²⁵ ACER-GEM (2019). Minimum Proficiency Levels described, unpacked and illustrated. GAML 6/REF2. <http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2019/05/GAML6-REF-2-MLP-recommendations-ACER.pdf>

UIS Global Item Bank

The GEM Centre is involved in setting terms of reference and quality standards for the UIS Global Item Bank and populating the item bank with ACER-developed items.

Contextual indicators

The GEM Centre has investigated approaches for measuring indicators that support stakeholders to understand and monitor contextual factors that have an impact on learning. The aim is to develop a framework of important contextual indicators that are associated with achievement, with a focus on the relevance of these indicators for low- and middle -income countries.

Socio-economic status (SES) is a core indicator associated with achievement and is important for evaluating the goal of equity in education as part of SDG 4. One of the goals of the GEM Centre is to develop an internationally comparable SES metric that reflects the context of low- and middle -income countries and is based on measures that are valid, reliable and have sufficient discriminatory power in a range of contexts. Two research papers have been written on the work in this area (see Table B.3). The first on the conceptual considerations needed to inform globally comparable and context-specific indicators of SES, and the second on developing a global scale of 'household wealth' as an indicator for SES. These papers were presented at international research conferences, including the European Conference on Educational Research (ECER), IEA Conference and UKFIET (see Table B.2).

Focus Area 3 Assessment evaluation, and exploring, extending and translating the evidence base for policy and practice

The overall objective of Focus Area 3 is to increase the evidence base for the development of effective assessment systems and education policies. This is achieved through specific goals on mapping, describing and evaluating assessments, and exploring, extending and translating the evidence base on effective policy and practice in education. Policy implications and future research directions are indicated by synthesising the available evidence and drawing conclusions from that synthesis. Results of these analyses are translated and disseminated in a useful format for different stakeholders, for example, in the form of policy briefs. Efforts in this area have resulted in a range of written research products to establish and document important aspects of the research evidence base (see Appendix B).

Assessment mapping

To build the evidence base on assessment systems, the GEM Centre contributed to the UIS' development of the CLA²⁶. The tools in the CLA collect data on countries' capabilities in learning assessment for the purpose of SDG 4 monitoring, recognising

²⁶ <http://uis.unesco.org/en/cla-survey>

that education systems are at different stages in their capacity for yielding high-quality data on learning outcomes. The GEM Centre's input to the CLA was based on the GP-LA²⁷, consolidating the '14 key areas of a robust assessment program' approach as a standard framework for evaluating the quality and fitness for purpose of learning assessments.

A model for evaluating the influence of learning assessments on education reform

Through the GEM Centre, ACER has also been working with Œuvre Malienne d'Aide à l'Enfance du Sahel (OMAES), a non-government organisation in Mali that undertakes citizen-led assessments to support the development of an internal monitoring and evaluation system. The OMAES evaluation approach prioritised three stakeholder groups: parents, school management committees, and decentralised education committees at the commune level. The model for evaluating the influence of learning assessments on education reform has been adapted and used by OMAES to inform policy and practice in Mali.²⁸

Early childhood interventions in LMIC

This scoping review responded to the increasing interest in improving ECEC in economically developing countries. It examines available research in relation to the question: What effective interventions have been implemented recently in economically developing countries to improve children's learning in the years before school?

As much of the research underpinning ECEC interventions has focused on economically developed countries, it is timely to review available research about the effectiveness of interventions in the economically developing world. ECEC interventions between 1998 and 2017 were categorised as income supplementation (n=8); parent-focused interventions (n=37); child-focused education and nurturing care (n=35); integrated interventions (n=4); quality (n=20); and comparative (n=5). Within the 109 studies selected for the review, 46 different instruments for assessing children's learning were used, with many other studies using measures that were not clearly identified.

The scoping review was published on the GEM Centre website²⁹, and six policy notes have been published based on the review findings (see Table B.1). A related article was also published on ACER Discover³⁰. The results were presented at the DFAT Education for Human Development Forum during November 2019.

²⁷ [Principles of Good Practice in Learning Assessment \(GP-LA\)](#)

²⁸ <https://www.acer.org/files/id-Issue-7-2017-lowresFINAL.pdf>

²⁹ https://research.acer.edu.au/monitoring_learning/38/

³⁰ <https://www.acer.org/au/discover/article/using-evidence-to-make-a-difference-to-young-childrens-learning>

An evidence map is available at: <http://egmopenaccess.3ieimpact.org/evidence-maps/improving-young-childrens-learning-economically-developing-countries-scoping-review>

Teacher professional learning on inclusion and supporting children with disabilities

During Phase 2, work commenced on a second scoping review ‘Teacher professional learning programs on the inclusion of students with disabilities in low- and middle-income countries in the Asia-Pacific’.

This review seeks to inform future education policy planning and development partner investment decisions on inclusive professional learning for in-service teachers. It examines the research question: What in-service professional learning programs aimed at assisting already practicing teachers with the inclusion of students with disabilities are currently offered in LMICs in the Asia-Pacific region?

Outputs from this review include a final report, policy briefs that highlight the findings from the review and an online interactive evidence gap map (forthcoming, 2021).

The initial findings from this review have been presented at the Educational Research (Re)connecting Communities (ECER) 2020³¹ online conference (in the Network 4: Inclusive Education forum), organised by the European Educational Research Association during August 2020 (see Table B.2).

4. Impact and sustainability

The impact of the ACER–DFAT partnership through the GEM Centre is readily apparent from the achievements already discussed. As indicated in the MTR of GEM in 2019,³² the GEM Centre

... has had a major impact on strengthening assessment systems at all three levels, national, regional and international. Although the SDG monitoring architecture is still under construction, the GEM Centre has already had significant impact on the way learning will be measured globally; and this way is in line with the shared values of the partners: measurement that takes account of context, is inclusive of developing countries’ proficiencies, affords comparability and at the same time motivates improvement.

³¹ <https://eera-ecer.de/ecer-2020-glasgow/reconnecting-eera-23-28-august-online/>

³² Fearnley-Sander, Mid-cycle independent review of the ACER Centre for Global Education Monitoring (ACER-GEM), January 2020, p. 37

Examples of GEM Centre impact

Some specific examples of the profound impact of the GEM Centre's work are listed below. Table A.1 and Table A.2 in Appendix A provide more examples.

The GEM Centre has:

- had a significant influence on the development of global indicators to report learning outcomes. It has been instrumental in defining learning in mathematics and reading, setting minimum proficiency levels, and developing procedures for obtaining outcome data.
- strengthened regional and in-country approaches to learning assessment. The GEM Centre has provided tailored technical support and capacity development in collaboration with partners and stakeholders to improve existing capacity, methods and tools, responding to local contexts, interests and needs (e.g. the Philippines, Afghanistan and Timor-Leste; see Appendix A).
- provided essential support to EQAP/PILNA and SEA-PLM to allow reporting against international benchmarks in the Education 2030 process.
- strengthened national assessment systems (e.g. South Africa, Ethiopia, Mauritania and Vietnam) and supported assessment networks (e.g. PAL network, TALENT and NEQMAP).
- developed the concept, tools and processes for the GPE's ANLAS. ANLAS provides a programmatic approach to assessment system strengthening and is available as a global good for all countries that wish to undertake the analysis.
- highlighted the wide variation in the way that young children's learning is defined and assessed across 109 studies in LMICs. The scoping review also revealed a lack of evidence in the Pacific. The findings have been disseminated to DFAT country posts to support project planning and implementation.

Altogether, and in line with the MTR findings, these examples prove the relevance and benefits of the ACER–DFAT partnership through the GEM Centre. The GEM Centre work demonstrates impact on the improvement of learning outcomes for all through strengthening assessment systems, as well as the sustainability in leveraging the agendas of both ACER and DFAT in partnership with global, regional and national education stakeholders.

Lessons learned and outlook for Phase 3

The independent MTR of the GEM Centre in 2019 noted the visibility of and recognition afforded to its achievements³³ and also reported the value of the partnership for DFAT and ACER. As a result of the success of the first two phases of the GEM Centre, the partnership will continue for a third phase from 2020.

The MTR was also critical in identifying areas for improvement, in particular relating to the efficacy of the ACER–DFAT partnership. In summary, these included:³⁴

- DFAT should take a more active role in guiding the priorities of GEM Centre work and in communicating the significance of the work to DFAT posts and stakeholders
- ACER and DFAT should both communicate the significance of the GEM Centre work to stakeholders, with a focus on outcomes over outputs/deliverables
- The GEM Centre needs to develop a Theory of Change or program logic, to better communicate its mission to improve learning through robust assessment, which is fundamental to creating impact through the partnership.

An overall goal for Phase 3 is therefore to strengthen the ACER–DFAT partnership through a clear strategic focus, deepened collaboration and active exchange, demonstrated outcomes over outputs, greater mutual accountability, and a stronger communications and stakeholder engagement strategy.

The COVID-19 pandemic has had a profound effect on education systems worldwide and has impacted the priorities of DFAT and ACER. The GEM Centre aims to better support DFAT partner governments to monitor and mitigate the negative impacts of COVID-19. DFAT considers the partnership with ACER through the GEM Centre as critical to building resilient education systems by monitoring and supporting learning outcomes during and post-crisis.

In order to achieve these goals and priorities, both partners engaged in an in-depth partnership planning exercise during July and August 2020. The outcomes of this process are documented in the 'DFAT–ACER GEM Partnership Phase 3 Strategy' document. The ACER–DFAT GEM Partnership Strategy for Phase 3 outlines:

- The program logic for the partnership in the form of the GEM Partnership Impact Pathway (i.e. Theory of Change). The impact pathway describes the shared priorities of the partnership and the strategies to support achievement of the broader goal of the ACER–DFAT partnership through the GEM Centre, where 'accessible and actionable data and knowledge is used to influence education policy, practice and

³³ Fearnley-Sander, Mid-cycle independent review of the ACER Centre for Global Education Monitoring (ACER-GEM), January 2020

³⁴ Fearnley-Sander, Mid-cycle independent review of the ACER Centre for Global Education Monitoring (ACER-GEM), January 2020

investment for improved learning outcomes of all children'. The impact pathway will guide the work, collaboration with stakeholders, and evaluation of success of the GEM Centre.

- The contribution to Australia's COVID-19 Development Response under Australia's Partnerships for Recovery.³⁵ The strategic partnership between DFAT and ACER through the GEM Centre is a vehicle for strengthening partnerships across the Indo-Pacific region, specifically drawing on high-quality evidence, analysis and research to inform the evolving response for recovery from the COVID-19 pandemic.
- An initial mapping of key stakeholders and wider collaborators to the GEM Centre to support communication of key messages, visibility of Australian technical expertise, and capacity building of stakeholders to understand, promote and use evidence-based approaches for effective policy, practice and investment, with a focus on the Indo-Pacific.
- The underlying partnership principles, clarification of roles and contributions of both partners for strengthened partnership governance and operations.
- Conducting an annual collaborative planning process to increase flexibility and to enable response to emerging trends and new opportunities, and a revised, streamlined reporting process.

The first year of implementing the GEM Partnership Strategy will focus on building a strong communications strategy with global, regional and national education stakeholders and networks. The GEM Partnership Impact Pathway will be translated into an annual work program, addressing the shared priorities and objectives of the partnership. In alignment with the work program, a plan for monitoring, evaluation and learning will be created, to ensure the objectives of the partnership are achieved, while learning from experiences gained through the partnership and through the broader networks of both partners.

³⁵ <https://www.dfat.gov.au/publications/aid/partnerships-recovery-australias-covid-19-development-response>

5. Appendices

Appendix A GEM Centre relationships and their impact

The GEM Centre works collaboratively with global, regional and national stakeholders in education.

Table A.1 lists programs of international, regional and civil society organisations that are collaborating with the GEM Centre, and for which GEM Centre principles of practice have been applied in a specific program context, leveraging capabilities, expertise and partnerships. The collaboration with these programs has been **funded by the GEM Centre**, with some contributions from partners (e.g. travel and accommodation for facilitating capacity building).

Table A.2 lists programs of international and regional organisations, governments and assessment bodies for which ACER is a contracted technical partner, and in which the **GEM Centre principles of practice have been applied** in a specific program context, leveraging capabilities, expertise and partnerships. The GEM Centre's contribution has also been financial, for example, in co-funding of specific elements of the work undertaken by ACER; supplementary funding of resources such as expertise and advisory; or start-up funding. The total value of ACER-contracted work in which GEM Centre principles have been applied, or received a financial contribution through the GEM Centre is around **AUD19.6 million**.

Table A.1: GEM Centre relationships and their impact – International, regional and civil society organisations' programs, 2017–2020

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
Education 2030 agenda – SDG 4 monitoring and reporting	UIS and GAML	2014 – ongoing	Support for the Education 2030 agenda has been a priority for the ACER–DFAT partnership under the GEM Centre since its inception. With the adoption of the SDGs, the UIS has been recognised as the official data source for SDG 4 monitoring and mandated to 'work with partners to develop new indicators, statistical approaches and monitoring tools to better assess progress across the targets related to UNESCO's mandate (...)'. ³⁶ In August 2017, UIS and ACER signed a Memorandum of Understanding in support of SDG 4 monitoring efforts, where the ACER–DFAT partnership through the GEM Centre was recognised as an essential contributor.

³⁶ <http://uis.unesco.org/en/topic/sustainable-development-goal-4>

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			<p>During Phase 2, significant support was provided to UIS through:</p> <ul style="list-style-type: none"> – Development and advocated use of the GP-LA, 2017³⁷, and the concept note for the <i>System-Wide Analysis of Assessment Practices</i> (SWAAP, 2017)³⁸. – Redevelopment of UIS' CLA,³⁹ which has formed the basis of their standard international data collection and reporting process (CLA: Version 2 Concept Note)⁴⁰. – Widespread consultation process around the draft ACER Learning Progressions, using the ACER Learning Progression Explorer (see Table A.2), and advocated for their use in the SDG 4.1 context, including at international conferences of the IEA, and ACER conferences, using ACER-GEM resources (see Table B.2). – Conducting a series of case studies to explore mechanisms to align existing assessment program outcomes with the ACER Learning Progressions. These case studies are intended to inform alternative mechanisms for systems to report against SDG 4.1.1. The case studies included linking of Grades 3 and 6 assessment data from Afghanistan; alignment of the ACER Progressive Achievement Tests (PAT Mathematics and PAT Reading); alignment of data from PILNA, to look at linking across year levels, and against SDG 4.1.1 Minimum Proficiency Levels. This resulted in the development of the comparative judgement linking approach (also known as the 'pairwise comparison method' for countries to use existing assessment systems/national assessment data to report against SDG 4.1.) This is an alternative method to the Policy Linking approach. – Review and substantive input into the Global Proficiency Frameworks for Reading and Mathematics (by USAID, UIS, DFID, the Bill and Melinda Gates Foundation, and ACER,⁴¹ and to the refinement and finalisation of the SDG 4.1.1 Minimum Proficiency Levels (2019/20)⁴². The GEM Centre provided input into the Policy Linking method and its application. – Involvement in setting terms of reference and quality standards for the UIS Global Item Bank, and population of the item bank through provision of ACER-developed items.

³⁷ <http://uis.unesco.org/sites/default/files/documents/principles-good-practice-learning-assessments-2017-en.pdf>

³⁸ <http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2018/08/gaml4-system-wide-analysis-assessment-practices.pdf>

³⁹ <http://uis.unesco.org/en/cla-survey>

⁴⁰ <http://uis.unesco.org/en/cla-survey>

⁴¹ <https://www.edu-links.org/resources/global-proficiency-framework-reading-and-mathematics>

⁴² ACER-GEM (2019). Minimum Proficiency Levels described, unpacked and illustrated. GAML 6/REF2. <http://gaml.uis.unesco.org/wp-content/uploads/sites/2/2019/05/GAML6-REF-2-MLP-recommendations-ACER.pdf>

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			<ul style="list-style-type: none"> – Contribution to GAML Task Forces: TF 4.1, TF 4.2 and TF 4.6 – Participation in meetings of GAML 4 (Nov 2017), GAML 5 (Oct 2018), GAML 6 (Aug 2019); Substantive contribution to Technical Expert Group meetings in 2017 and 2018 on alternative methods for reporting against SDG 4.1.1; and consensus building on the SDG 4.1.1. Minimum Proficiency Level descriptions for reading and mathematics.
NEQMAP https://bangkok.unesco.org/content/network-education-quality-monitoring-asia-pacific-neqmap/	UNESCO Bangkok, NEQMAP Secretariat and member countries	2013 – ongoing	<p>The GEM Centre has been a member of NEQMAP since its inception in 2013 and contributed to the three pillars of NEQMAP: knowledge sharing, capacity development and research. Since 2017, the GEM Centre has provided guidance in the NEQMAP Steering Group (SG) through a representative member. Most recently SG was involved in developing and reviewing the NEQMAP strategy 2020–2024,⁴³ which was presented to NEQMAP members in a webinar in June 2020, with input from the GEM Centre.</p> <p>Under the pillar of knowledge sharing, GEM representatives participate in annual NEQMAP meetings and webinars, network with participants and present GEM Centre principles and approaches, resulting in strong partnerships with member organisations and institutions. One example is the relationship with the Brookings Institution through the Optimizing Assessment for All program about the application of 21st century skills in assessment, curriculum and pedagogy, for which ACER was a contracted technical partner, and in which NEQMAP members participated.</p> <p>Under the pillar of Capacity Development, the GEM Centre has facilitated workshops in collaboration with UNESCO Bangkok NEQMAP Secretariat and other partners. The following workshops were conducted:</p> <ul style="list-style-type: none"> – Data quality and accuracy (March 2018) – School-based, classroom, teacher and formative assessment (June 2019) – Promoting transversal competencies across curriculum, pedagogy and assessment (facilitated jointly by Brookings and the GEM Centre, September 2019) <p>Under the pillar of research, the GEM Centre and UNESCO Bangkok NEQMAP Secretariat jointly edited and published the NEQMAP Topical Case Studies on using assessment data in education policy and practice, supporting authorship of NEQMAP members. Issues published during this period were:</p> <ul style="list-style-type: none"> – Integrating the findings from the National Assessment of Student Achievement into the policy process: An experience from Nepal (Poudel & Bhattarai, 2018)⁴⁴

⁴³ <https://neqmap.bangkok.unesco.org/resource/neqmap-strategy-2020-2024/>

⁴⁴ https://research.acer.edu.au/ar_misc/25

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			<ul style="list-style-type: none"> – The Southeast Asia Primary Learning Metrics Program: Thinking globally in a regional context (UNICEF, & Southeast Asian Ministers of Education Organization [SEAMEO], 2019)⁴⁵ <p>In this partnership period the GEM Centre also contributed to the publication of a NEQMAP thematic review on equitable learning assessments for students with disabilities by UNESCO Bangkok, which was presented in a panel discussion at the November 2019 NEQMAP annual meeting. The findings of this review were also discussed in a paper prepared by a GEM Centre representative for the Asia-Pacific Regional Meeting on Education 2030 (APMED 2030) held in Bangkok in October 2019.</p>
TALENT http://www.education2030-africa.org/index.php/en/task-team/teaching-and-learning-talent	UNESCO Dakar, TALENT Secretariat and member countries	2014 – ongoing	<p>The GEM Centre co-facilitated two TALENT regional capacity-building workshops with UNESCO Dakar (TALENT Secretariat):</p> <ul style="list-style-type: none"> – Effective reporting, dissemination and use of large-scale learning assessments (co-facilitated with UNESCO Dakar and CONFEMEN/PASEC, November 2018)⁴⁶ – Development and strategic use of national large-scale learning assessments (co-facilitated with UNESCO Dakar, UNESCO IIEP, ACER and UNICEF, December 2019)⁴⁷
PAL Network for citizen-led assessments https://palnetwork.org/	PAL Network	2014 – ongoing	<p>The GEM Centre is a special member of the PAL network, where member organisations conduct citizen-led assessments in 14 low- and middle-income countries across Africa, Asia and North America. Citizen-led, household-based assessments are an important data source for education monitoring at the national, regional, and global level towards achieving SDG 4, measuring basic literacy and numeracy competencies of all children in a household, whether or not they are enrolled in or attending school. A common aim of citizen-led assessments is to bring learning and measurement of learning outcomes and progress to the centre of educational policy and practice. Through the GEM Centre, ACER has also been providing technical support to individual citizen-led assessments (see Table A.2 – LEARNigeria program).</p> <p>During Phase 2, the GEM Centre was involved with the PAL network in the following ways:</p> <ul style="list-style-type: none"> – developed assessment models for citizen-led assessments to illustrate improvements in item development and to propose an adaptive test design

⁴⁵ https://research.acer.edu.au/ar_misc/33/

⁴⁶ <http://www.education2030-africa.org/index.php/en/regional-coordination-group/task-team/teaching-and-learning-talent/72-news-talent/876-large-scale-assessment-workshop>

⁴⁷ <http://www.education2030-africa.org/index.php/en/workshop-link-december-2019>

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			<ul style="list-style-type: none"> – provided support for developing the PAL network Data Quality Standards Framework⁴⁸ to help improve and ensure the quality of citizen-led assessments as an important data source in SDG 4 monitoring (2018) – provided technical support for developing common assessments for literacy (ICARe) and numeracy (ICAN) (2019–ongoing⁴⁹); The GEM Centre funded support has led to a research project for which PAL is partnering with ACER under the GPE Knowledge and Innovation Exchange (KIX) Global call for Innovations – co-funding for ACER to deliver a series of capacity-building workshops on objective measurement for approximately 45 members of the PAL Network (2020) – co-funding and technical guidance to apply item-response theory to scale PAL assessment data and develop meaningful reporting levels (2020, in progress) – co-funding and technical guidance to conceptualise and undertake a feasibility study to apply the Comparative Judgement Linking method to align ICAN reporting levels to the 4.1.1 Minimum Proficiency Levels (SDG 4.1.1a) (2020, in progress).
Strengthening learning assessment systems	GPE	2018–ongoing	<p>The GEM Centre’s support for ACER to develop and implement GPE’s initiative ANLAS (see Table A.2), continued with the GPE’s dissemination of ANLAS. Other activities supported by the GEM Centre were:</p> <ul style="list-style-type: none"> – a joint webinar of IIEP, GPE and ACER on the use of learning assessment data⁵⁰ – a joint presentation of ANLAS at the annual NEQMAP meeting – joint facilitation of a regional capacity-building workshop with UNESCO Dakar, UNESCO IIEP and UNICEF for UNESCO TALENT (see Table A.1 on Teaching and Learning Educators’ Network for Transformation) – preparation of a concept note for a NEQMAP regional capacity-building workshop on ANLAS in collaboration with GPE and UNESCO Bangkok. <p>The GEM Centre also provided input and review of the discussion paper on ‘Strengthening learning assessment systems’ for the GPE KIX initiative.⁵¹ The paper is part of a series, drafted to support the</p>

⁴⁸ https://palnetwork.org/wp-content/uploads/2018/04/2018_PAL-Network_DQSF_FINAL.pdf

⁴⁹ <https://palnetwork.org/how-ican-adds-value-in-the-global-regional-and-national-education-monitoring-landscape/>

⁵⁰ <https://learningportal.iiep.unesco.org/en/forum/join-our-second-webinar-on-the-use-of-learning-assessment-data>

⁵¹ <https://www.globalpartnership.org/content/strengthening-learning-assessment-systems-knowledge-and-innovation-exchange-kix-discussion-paper>

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			<p>engagement and consultation of developing country partners and technical experts in the initial design of the GPE KIX.</p> <p>A more recent GEM Centre tool that has been initiated through the work on ANLAS and is currently under development is a decision matrix for large-scale assessments. This tool will support countries to identify existing large-scale assessment programs (international/regional) that match their monitoring needs.</p>

Table A.2 GEM Centre relationships and impact – Programs for which ACER is a technical partner (2017–2020)

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
SEA-PLM	SEAMEO and UNICEF East Asia and Pacific Regional Office (UNICEF EAPRO)	2012–ongoing	<p>ACER has been the technical partner of SEAMEO and UNICEF in developing and implementing SEA-PLM since its initiation in 2012. The GEM Centre approach to 14 key areas of a robust assessment program (GP-LA) and the GEM Centre principles of practice have informed the development of SEA-PLM approach to assessing learning outcomes in reading, writing, maths and global citizenship in Grade 5 students. The GEM Centre’s input is also essential for promoting the use of the SEA-PLM data for education policy purposes, including methods for reporting against SDG 4.1.</p> <p>During this period of the ACER–DFAT partnership, in 2019, the GEM Centre funded the ACER representative to participate in a three-day workshop as part of the SEA-PLM Regional Steering Committee Meeting to outline how assessment data can help ministries of education set policy targets, minimum proficiency levels and link these to global SDG targets.</p> <p>In 2020, the GEM Centre co-funded, and provided technical guidance for the alignment of SEA-PLM reporting levels with the ACER Learning Progressions (see Table A.2), to enable reporting against the SDG 4.1.1 Minimum Proficiency Levels. As a result of this alignment study, it has been possible to report the performance of Grade 5 students in six countries in the ASEAN region against SDG 4.1.1a and 4.1.1b Minimum Proficiency Levels in reading and mathematics.</p>
ACER Learning Progressions	ACER CARI and Australian Curriculum, Assessment and Reporting Authority (ACARA)	ACER: 2014–ongoing ACARA: 2019–ongoing	<p>Initiated in 2010, the ACER Learning Progressions were further developed and realised through the GEM Centre’s input into developing a unifying approach for reporting results from multiple assessment programs based on a shared understanding of reading and mathematics against SDG indicator 4.1.1 (see Table A.1). Since then, the GEM Centre has continued to work closely with ACER’s Centre for Assessment Reform and Innovation (CARI) to build infrastructure to support improved reporting of assessment outcomes, linked to the ACER Learning Progressions, including the ACER Learning Progression Explorer.⁵² Through this work, the GEM Centre has provided advocacy and support relating to the wider use of learning progressions in a range of projects across ACER. The GEM Centre has also been influential in providing high-level input to some large Australian reviews in the last two years, that is, the Gonski review,⁵³ and more recently the NSW Curriculum Review⁵⁴. Since 2019, ACER has been collaborating with ACARA on harmonising ACARA and ACER Learning Progressions with a view to their use in Australian domestic settings.</p>

⁵² <https://www.acer.org/au/gem/learning-progression-explorer>

⁵³ Northam, M. (2017). Gonski: Review to achieve educational excellence in Australian schools. *Newsmonth*, 37(7), 4.

⁵⁴ Masters, G. N. (2020). Reforming the New South Wales curriculum.

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			The GEM Centre work on the ACER Learning Progressions has also been influential in the establishment of other work programs to build learning progressions in areas such as the general capabilities of critical thinking, collaboration and creative thinking. This includes definitions and hypothetical progressions of the skills, as well as the development and trial testing of a range of assessment materials (test items, rubrics for evaluating responses, etc.) for the assessment of 21st-century skills.
Pacific Regional Partnership, including the PILNA	EQAP of the Pacific Community (SPC)	2015–2017 2018–ongoing	<p>ACER’s long-term partnership with EQAP contributes to ongoing support of education quality and equity in the Pacific region. Initiated in 2015 with support from the GEM Centre, ACER provided technical assistance to EQAP⁵⁵ in support of three key objectives:</p> <ol style="list-style-type: none"> 1) to work with EQAP to establish the governance and management of PILNA as a regional assessment 2) to support the development and implementation of PILNA 2015 3) to support the design of a long-term regional assessment model. <p>The experience of the GEM Centre in the strengthening of assessment systems for the improvement of learning paved the way for a strongly-aligned partnership with ACER, the GEM Centre and EQAP.⁵⁶</p> <p>In 2018, the Governments of Australia and New Zealand established flexible financing to support a long-term technical partnership between EQAP of the Pacific Community (SPC) and ACER. This funding mechanism is supported by bilateral donors to improve education quality in the Pacific region. The partnership’s most recognised program is the ongoing administration and development of PILNA. Areas of support within the broader partnership include: the use of data to inform educational programming and policy; ongoing capacity support in all areas of assessment, including administering PILNA in a COVID-19 environment; ACER’s support to EQAP on specific Pacific Regional Education Framework initiatives; and collaboration with the GEM Centre.</p> <p>During this partnership phase, the GEM Centre collaborated with EQAP on the use of PILNA data for a case study on aligning PILNA reporting levels with the SDG 4.1.1. Minimum Proficiency Levels to inform alternative mechanisms for reporting against SDG 4.1.1 (see Table A.1). This has been followed by the PILNA Pairwise Study Project which commenced in 2019. The study uses the Comparative Judgement Linking method) to map PILNA against the SDG 4.1.1 Minimum Proficiency Levels in mathematics and reading. The study is an important step for Pacific education stakeholders releasing regional student</p>

⁵⁵ EQAP was formerly known as the South Pacific Board of Educational Assessment (SPBEA). SPBEA formally changed its name to EQAP in 2015. EQAP is a program within the Pacific Community (SPC), and is mandated to support the development of education quality in the Pacific region.

⁵⁶ ACER-GEM (2020). Reflections paper on ACER-EQAP Partnership and its ongoing development.

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			learning data that can be used in international reporting. The PILNA Pairwise Study is also designed to support capacity development of Pacific education stakeholders. A pilot workshop is planned for implementation in Fiji with EQAP staff, Fiji Ministry of Education staff, expert teachers and education faculty from tertiary institutions. The purpose is to replicate the pairwise judgement and mapping of PILNA proficiency levels against the SDG 4.1.1 Minimum Proficiency Levels. The purpose of the pilot workshop is also to provide EQAP and stakeholders with a more in-depth understanding of the comparative judgement method and student learning outcomes in mathematics and reading.
Let's Evaluate, Assess and Report Nigeria (LEARNigeria)	The Education Partnership (TEP) Centre, Nigeria	2017–2019	<p>Building on to the long-term relationship of the GEM /Centre with the PAL network (see Table A.1), ACER provided technical support to TEP CENTRE during the scale-up phase of the LEARNigeria citizen-led assessment. The support included three phases:</p> <ol style="list-style-type: none"> 1 a desk review of the assessment key areas of the LEARNigeria pilot to provide input for improvement for the Main Study, based on the GP-LA. During this phase, the GEM Centre also supported the development of 'Test development principles',⁵⁷ and 'A test model for citizen-led assessments'⁵⁸ (see also Table A.1) 2 support for test development for higher grades in English and numeracy (assessment item review), and a review of the LEARNigeria 2017–2018 Main Study databases prior to their publication 3 item development workshop facilitated by ACER in Lagos, Nigeria.
Capacity development on robust learning assessment (India)	UNICEF	2017–ongoing	<p>In 2017, under a UNICEF contract, ACER India conducted a series of 3-day introductory capacity development workshops on robust learning assessment and use of data for senior state education officials of all states in India. The workshops included an orientation on the key aspects of large-scale assessments and the identification of potential areas to further enhance capacity to implement large-scale assessments in the states of India. For this purpose, ACER India developed a self-evaluation tool based on the GP-LA. The self-evaluation tool enabled senior educational officials to evaluate the degree of preparedness of the state to undertake a large-scale assessment and to identify the developmental needs for further capacity building.</p> <p>This exercise led to UNICEF supporting states to undertake further long-term capacity building of 45 key educational personnel across 15 states through a series of workshops (53 days of face-to-face or online interactions – due to Covid-19) on various aspects of a robust assessment program on planning, item</p>

⁵⁷ ACER. (2017a). Test Development Principles. Melbourne: ACER.

⁵⁸ ACER. (2017b). A Test Model for Citizen-Led Assessments. Developed for the People's Action for Learning (PAL) Network. Melbourne: ACER.

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			development, data analysis and reporting.
PATHWAYS for Peace and Development (Bangsamoro Autonomous Region in Muslim Mindanao)	Palladium (DFAT funded)	2017–ongoing	As part of a broader program of support, the GEM Centre approach to 14 key areas of a robust assessment program (GP-LA) and the GEM Centre’s principles of practice were incorporated into the development of a baseline early grade student assessment in reading and mathematics.
Development and implementation of a National Assessment Framework for Afghanistan	Ministry of Education, Afghanistan (UNICEF funded)	2017–2020	Building onto the GEM Centre’s Monitoring Trends in Educational Growth (MTEG) model ⁵⁹ , which was first implemented by ACER in Afghanistan (2012–2016), as well as tools and methods developed by the GEM Centre, ACER facilitated a series of workshops during 2017–2019 to support the Afghanistan Ministry of Education to outline modern assessment theory and best practice. ACER’s assistance also included support of MoE’s development of a national assessment strategy, and a capacity development framework to support implementation of that strategy. The focus during 2019–2020 has been on formative assessment in the classroom.
Capacity analysis in Timor-Leste	UNICEF (under the SEA-PLM contract)	2018	ACER worked with UNICEF to evaluate educational assessment capabilities in Timor-Leste. ⁶⁰ The Capacity Needs Analysis tool was developed based on the GP-LA. The resulting analysis provided insights into Timor-Leste’s assessment capacity and identified opportunities for capacity development, recommending a phased approach to building a stronger understanding of assessments, their purposes and uses among policymakers and practitioners. The analysis would provide a base for developing a national assessment policy or strategy, giving Timor-Leste the capacity to participate in regional or cross-national assessments like SEA-PLM and to report on progress towards the United Nations Sustainable Development Goals.
ANLAS Ethiopia, Mauritania and Vietnam https://www.globalpartnership.org/content/toolkit-analysis-national-learning-assessment-systems-anlas	GPE	2018–2019	ANLAS was initiated by the GPE to provide a resource for developing country partners to build effective and sustainable learning assessment systems leading to evidence-based decision-making in education policy and practice and to support education sector planning. The ANLAS tools and processes were developed by ACER, with significant input from the GEM Centre. In 2019, ANLAS was piloted in three countries: Ethiopia, Mauritania and Vietnam. The GEM Centre’s contribution was initiated through the GAML concept note on the ‘SWAAP (see Table A.1), which underpinned the development of the ANLAS model. In particular, the ‘quality’ dimension of ANLAS is underpinned by the GP-LA. The GEM Centre also provided supplementary funding in the form of

⁵⁹ <https://www.acer.org/au/gem/key-areas/system-strengthening/mteg>

⁶⁰ <https://www.acer.org/au/discover/article/supporting-timor-lestes-capacity-to-assess-teaching-and-learning>

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
			the GEM specialist resource group that provided guidance for the conceptualisation of the ANLAS model.
OECD PISA 2022 Core E Country Preparation and Implementation Support (India, Uzbekistan, El Salvador and Mongolia)	Organisation for Economic Co-operation and Development (OECD)	2018–2022	<p>The GEM Centre approaches, in particular the GP-LA and the ANLAS model, were the basis for the Capacity Needs Analysis framework and Capacity Building Plan developed by ACER for the OECD PISA 2021 Core E Country Preparation and Implementation Support. The framework was operationalised into interview guides and implemented in four countries (India, Uzbekistan, El Salvador and Mongolia) to identify capacity needs in large-scale assessments more broadly, and specifically for the successful implementation of PISA 2022.</p> <p>The GP-LA framework has also been used to facilitate a capacity-building workshop on quality of large-scale assessment for PISA 2021 Core E countries as part of the 2nd NPM meeting for PISA 2022 in Bangkok in November 2019.</p>
Systemic Evaluation of the Basic Education Sector in South Africa	Department of Basic Education of the Republic of South Africa	2018–ongoing	<p>Startup funding resources from the GEM Centre were provided to undertake a one-week Partnership Initiation Workshop with the Department of Basic Education of the Republic of South Africa to establish a partnership and scope technical assistance for the Systemic Evaluation of the Basic Education Sector in South Africa (May 2018). The scoping of technical support needs was based on the GEM Centre’s MTEG model.⁶¹</p> <p>MTEG principles are further applied in the systemic evaluation with the aim to vertically link assessments at Grades 3, 6 and 9 to show learning progression. The assessments will allow reporting against SDG 4.1.1.</p>
Knowledge Platform on Learning Assessment	UNICEF South Asia	2019	<p>ACER India developed the content of a knowledge platform on learning assessment for UNICEF South Asia.⁶² Altogether 25 key topics across six major phases of the assessment cycle, were addressed, building onto the GP-LA framework.</p> <p>For each topic, three sets of content were developed catering to the needs of readers at different levels – introductory, intermediate and advanced. The portal also plans to have materials from all South Asian countries, a sample question of the week, free open-source data collection and data visualisation software, information on online courses, materials for teachers, etc.</p>
Schools 2030 https://www.schools2030.org/	Consortium of nine philanthropic partners led by the Aga Khan	2020–ongoing	The GEM Centre provided initial technical support for the Aga Khan Foundation Schools 2030 project. In addition, the GEM Centre supplied MTEG assessment items to enable program initiation.

⁶¹ <https://www.acer.org/au/gem/key-areas/system-strengthening/mteg>

⁶² <https://www.acer.org/au/discover/article/a-knowledge-portal-on-learning-assessments-for-south-asia>

Program	Partners/stakeholders	Year	GEM relationship and impact (2017–2020)
	Foundation		

Appendix B GEM Centre papers published during Phase 2

Table B.1 GEM Centre papers published during Phase 2

Year	Paper title	Details
2020	How ICAN adds value in the global, regional and national education monitoring landscape	Schwantner, U., & Walker, M. (2020, July 07). <i>How ICAN adds value in the global, regional and national education monitoring landscape.</i>
2020	International Early Learning and Child Well-Being Study	Australian Council for Educational Research. (2020). <i>International early learning and child well-being study.</i> Australian Council for Educational Research.
2020	International Civic and Citizenship Education Study	Australian Council for Educational Research. (2020). <i>International Civic and Citizenship Education Study.</i> Australian Council for Educational Research.
2020	Trends in International Mathematics and Science Study: Measuring and making international comparisons of student achievement in mathematics and science	Australian Council for Educational Research. (2020). <i>Trends in International Mathematics and Science Study: Measuring and making international comparisons of student achievement in mathematics and science.</i> Australian Council for Educational Research.
2020	The Early Grade Mathematics Assessment: Assessing children's acquisition of basic numeracy skills in developing countries	Australian Council for Educational Research. (2020). <i>The Early Grade Mathematics Assessment: Assessing children's acquisition of basic numeracy skills in developing countries.</i> Australian Council for Educational Research.
2020	Progress in International Reading Literacy Study: Measuring and making international comparisons of student achievement in reading	Australian Council for Educational Research. (2020). <i>Progress in International Reading Literacy Study: Measuring and making international comparisons of student achievement in reading.</i> Australian Council for Educational Research.
2020	Pacific Islands Literacy and Numeracy Assessment	Australian Council for Educational Research. (2020). <i>Pacific Islands Literacy and Numeracy Assessment.</i> Australian Council for Educational Research.
2020	International Computer and Information Literacy Study	Australian Council for Educational Research. (2020). <i>International Computer and Information Literacy Study.</i> Australian Council for Educational Research.
2020 (updated: original 2015)	The Southern and Eastern Africa Consortium for Monitoring Educational Quality	Australian Council for Educational Research. (2020). <i>The Southern and Eastern Africa Consortium for Monitoring Educational Quality.</i> Australian Council for Educational Research.
2020 (updated: original 2014)	The Latin-American Laboratory for Assessment of the Quality of Education: Measuring and comparing educational quality in Latin America	Australian Council for Educational Research. (2020). <i>The Latin-American Laboratory for Assessment of the Quality of Education: Measuring and comparing educational quality in Latin America.</i> Australian Council for Educational Research.
2020 (updated: original 2014)	The Early Grade Reading Assessment: Assessing children's	Australian Council for Educational Research. (2020). <i>The Early Grade Reading Assessment: Assessing children's</i>

Year	Paper title	Details
original 2014)	acquisition of basic literacy skills in developing countries	literacy skills in developing countries . Australian Council for Educational Research.
2019	Minimum proficiency levels described, unpacked and illustrated	ACER-GEM (2019). Minimum proficiency levels described, unpacked and illustrated. GAML 6/REF2 .
2019	Equitable learning assessments for students with disabilities (NEQMAP Thematic Review) by UNESCO Bangkok	Chakraborty, A., & Kaushik, A. (2019). Equitable learning assessments for students with disabilities (NEQMAP thematic review) . UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific. Bangkok.
2019	The Southeast Asia Primary Learning Metrics Program: Thinking globally in a regional context	UNICEF & SEAMEO. (2019). The Southeast Asia Primary Learning Metrics Program: Thinking globally in a regional context . Australian Council for Educational Research.
2019	Using evidence to make a difference to young children's learning	Ahmed, S. K. (2019). Using evidence to make a difference to young children's learning . Australian Council for Educational Research.
2019	Measurement of young children's learning for program evaluation	Jackson, J., Ahmed, S. K., Carslake, T., Lietz, P. (2019). Measurement of young children's learning for program evaluation. (Insights from a scoping review; Policy note 1) . Australian Council for Educational Research.
2019	Effective child-focused education and nurturing care interventions	Jackson, J., Ahmed, S. K., Carslake, T., Lietz, P. (2019). Effective child-focused education and nurturing care interventions. (Insights from a scoping review; Policy note 2) . Australian Council for Educational Research.
2019	Parent-focused interventions in economically developing countries	Jackson, J., Ahmed, S. K., Carslake, T., Lietz, P. (2019). Parent-focused interventions in economically developing countries. (Insights from a scoping review; Policy note 3) . Australian Council for Educational Research.
2019	Income supplementation interventions in economically developing countries	Jackson, J., Ahmed, S. K., Carslake, T., Lietz, P. (2019). Income supplementation interventions in economically developing countries. (Insights from a scoping review; Policy note 4) . Australian Council for Educational Research.
2019	Quality-focused interventions in early childhood education and care (ECEC) in economically developing countries	Jackson, J., Ahmed, S. K., Carslake, T., Lietz, P. (2019). Quality-focused interventions in early childhood education and care (ECEC) in economically developing countries. (Insights from a scoping review; Policy note 5) . Australian Council for Educational Research.
2019	Integrated interventions in early childhood education and care (ECEC) in economically developing countries	Jackson, J., Ahmed, S. K., Carslake, T., Lietz, P. (2019). Integrated interventions in early childhood education and care (ECEC) in economically developing countries. (Insights from a scoping review; Policy note 6) . Australian Council for Educational Research.
2019	Improving young children's learning in economically developing countries: What works,	Jackson, J., Ahmed, S. K., Carslake, T., & Lietz, P. (2019). Improving young children's learning in economically

Year	Paper title	Details
	why, and where? Scoping review	developing countries: What works, why, and where? Scoping review . Australian Council for Educational Research.
2019	The role of learning progressions in global scales	Adams, R. (2019). The role of learning progressions in global scales . <i>International Developments</i> , 9, 16. Australian Council for Educational Research.
2018	Validating professional standards for teachers: A practical guide for research design: Snapshot literature review	Jackson, J., & Nietschke, Y. (2018). Validating professional standards for teachers: A practical guide for research design: Snapshot literature review . Australian Council for Educational Research.
2018	Integrating the findings from the National Assessment of Student Achievement into the policy process	Poudel, L. N., & Bhattarai, G. P. (2018). Integrating the findings from the National Assessment of Student Achievement into the policy process: An experience from Nepal . Australian Council for Educational Research and UNESCO.
2018	The UIS Reporting Scales: Concept note	The Centre for Global Education Monitoring. (2018). The UNESCO Institute for Statistics (UIS) reporting scales: Concept note . ACER Centre for Global Education Monitoring.
2018	Learning progressions as an inclusive solution to global education monitoring	Adams, R. J., Jackson, J., & Turner, R. (2018). Learning progressions as an inclusive solution to global education monitoring . Australian Council for Educational Research.
2018	Development of reporting scales for reading and mathematics	Turner, R., Adams, R., Schwantner, U., Cloney, D., Scoular, C., Anderson, P., Daraganov, A., Jackson, J., Knowles, S., O'Connor, G., Munro-Smith, P., Zoumboulis, S., & Rogers, P. (2018). Development of Reporting scales for reading and mathematics: a report describing the process for building the UIS Reporting Scales . Australian Council for Educational Research.
2017	ACER's role in the work plan of the Global Alliance to Monitor Learning	The Centre for Global Education Monitoring. (2017). Monitoring learning against the Sustainable Development Goals: ACER's role in the work plan of the Global Alliance to Monitor Learning . Australian Council for Educational Research.
2017	Girls' primary and secondary education in Malawi – Sector review: Final Report	Robertson, S., Cassity, E., & Kunkwenzu, E. (July 2017). Girls' Primary and Secondary Education in Malawi: Sector Review: Final Report . Australian Council for Educational Research.
2017	Working with UIS towards a global measurement scale	Adams, R. (2017). Partner focus: Working with UIS towards a global measurement scale . <i>International Developments</i> , 7, 6. Australian Council for Educational Research.
2017	In Africa, many are in school but not learning	Schwantner, U. (2017). Policy: In Africa, many are in school but not learning . <i>International Developments</i> , 7, 12. Australian Council for Educational Research.
2017	In Afghanistan, teachers matter	Friedman, T. (2017). Policy: In Afghanistan, teachers matter . <i>International Developments</i> , 7, 14. Australian Council for Educational Research.

Year	Paper title	Details
2017	Improving student learning in Mali	Lietz, P. (2017). Innovation: Improving student learning in Mali . <i>International Developments</i> , 7, 17. Australian Council for Educational Research.
2017	Principles of good practice in learning assessment.	ACER & UNESCO Institute for Statistics. (2017). Principles of good practice in learning assessment . Australian Council for Educational Research..
2017	System-wide analysis of assessment practices: Concept note.	Australian Council for Educational Research. (2017). System-wide analysis of assessment practices. Concept note . UNESCO Institute for Statistics. Global Alliance to Monitor Learning. GAML4/REF/11.

Table B.2 Conference papers and presentations on GEM Centre work

Year	Conference details	Presentation titles	References and links
2020	European Educational Research Association Conference (online)	Insights from a scoping review on teacher professional learning programs on the inclusion of students with disabilities in low and middle-income countries in the Asia-Pacific	Ahmed, S. K., Jeffries, D., Chakraborty, A., & Lietz, P. (2020, August 27). Insights from a scoping review on teacher professional learning programs on the inclusion of students with disabilities in low and middle-income countries in the Asia-Pacific. [Paper presentation]. European Educational Research Association Conference.
2019	People's Action for Learning (PAL) Network Conference	Bridging the gap between SDG 4.1 and 4.2	Cloney, D. (2019, November 5–6). <i>Bridging the gap between SDG 4.1 and 4.2</i> . People's Action for Learning (PAL) Network Conference: Ensuring all Children Learn, Lessons on Inclusion and Equity from the South, Kathmandu, Nepal https://palnetwork.org/conference/
2018	Organisation Mondiale pour l'Éducation Préscolaire (OMEP) Conference	How early learning interventions respond to diverse international contexts: a scoping review	Jackson, J., Ahmed S.K., & Carslake, T. (2018) <i>How early learning interventions respond to diverse international contexts: A scoping review</i> . Organisation Mondiale pour l'Éducation Préscolaire (OMEP) Conference.
2018	Frontiers in Educational Measurement	Creating a vertical scale to support the Sustainable Development Goal agenda of lifelong learning	Scoular, C., Cloney, D., Daraganov, A., Adams, R., et al. (2018). <i>Creating a vertical scale to support the Sustainable Development Goal agenda of lifelong learning</i> . Frontiers in Educational Measurement.
2018	Frontiers in Educational Measurement	Using educational measurement to support countries to achieve the Sustainable Development Goals in post-conflict contexts	Cloney, D., Daraganov, A., Patterson, L., Adams, R., et al. (2018). <i>Using educational measurement to support countries to achieve the Sustainable Development Goals in post-conflict contexts</i> . Frontiers in Educational Measurement.

Year	Conference details	Presentation titles	References and links
2018	Every Child Ready, Every Child Learning. Conference in Auckland on measuring early reading (supported by the World Bank)	From Pre-school to Primary school: How do we know children are ready?	Spink, J. (2018, March 5–7). <i>From pre-school to primary school: How do we know children are ready?</i> [Paper presentation]. Every Child Ready, Every Child Learning Conference, Auckland, New Zealand.
2018	South Asia Regional Conference on Using Large Scale Assessments to Improve Teaching and Learning in New Delhi, India (Supported by the World Bank)	Setting Performance Standards	Spink, J. (2018, April 25–27). <i>Setting performance standards</i> [Paper presentation]. South Asia Regional Conference on Using Large Scale Assessments to Improve Teaching and Learning, New Delhi, India.
2018	International Association for Educational Assessment (IAEA)	The role of big data in education quality monitoring: implications at the global, regional and national levels	Schwantner, U., Kaushik, A., Turner, R., Waters, C., & Adams, R. (2018). <i>The role of big data in education quality monitoring: implications at the global, regional and national levels</i> [Paper presentation]. International Association for Educational Assessment, Oxford, UK.
2017	European Educational Research Association Conference	Towards improved measures of socio-economic status in low- and middle-income countries	Adams, R., Ahmed, S.K., Cloney, D., Dix, K., et al. (2017). <i>Towards improved measures of socio-economic status in low- and middle-income countries</i> . European Educational Research Association Conference, Copenhagen, Denmark.
2017	IEA International Research Conference	Towards improved measures of socio-economic status in low- and middle-income countries	Adams, R., Ahmed, S.K., Cloney, D., Dix, K., et al. (2017). <i>Towards improved measures of socio-economic status in low- and middle-income countries</i> . IEA International Research Conference, Prague, Czech Republic.
2017	DFAT policy forum	Implications of the SDGs? Do we have to homogenise assessments?	Adams, R.J. (2017). Implications of the SDGs? Do we have to homogenise assessments? DFAT policy forum.

Year	Conference details	Presentation titles	References and links
2017	UKFIET conference	Improving the measurement of family background to improve the understanding of equity of learning outcomes in many contexts	Cloney, D., Lietz, P., Routitsky, A., Adams, R., et al. (2017). <i>Improving the measurement of family background to improve the understanding of equity of learning outcomes in many contexts</i> [Paper presentation]. The Education and Development Forum (UKFIET) Conference, Oxford, UK.

2017	UKFIET conference	How do we communicate the learning progression of children from many contexts? An illustration using the Early Grade Reading Assessment (EGRA)	Adams, R., Cloney, D., Schwantner, U., Turner, R., & Anderson, P. (2017). <i>How do we communicate the learning progression of children from many contexts? An illustration using the Early Grade Reading Assessment (EGRA)</i> [Paper presentation]. The Education and Development Forum (UKFIET) Conference, Oxford, UK.
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